

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A permanent magnet brushless motor comprising:
a wound assembly comprising permeable laminations with slots;
an insulated copper wire wound within the slots to provide electrical phases;
a field assembly comprising a permeable structure and at least 20 magnet poles
arranged thereon;

wherein the wound assembly and the field assembly are arranged to produce a
motive force when the electrical phases of the wound assembly are excited; and
wherein the wound assembly has more less slots than the field assembly has poles
to increase torque efficiency.

Claim 2 (Original): The permanent magnet brushless motor of claim 1 wherein
the motor has 36 slots and 46 poles.

Claim 3 (Original): The permanent magnet brushless motor of claim 1 wherein
the motor has 30 slots and 38 poles.

Claim 4 (Original): The permanent magnet brushless motor of claim 1 wherein
the wound assembly rotates and the field assembly remains still.

Claim 5 (Original): A permanent magnet brushless motor comprising:

a wound assembly with slots formed therein;

an insulated copper wire wound within the slots to provide electrical phases;

a field assembly comprising a permeable structure and permanent magnet poles arranged thereon;

wherein the wound assembly and the field assembly are arranged to produce a motive force when the electrical phases of the wound assembly are excited; and

wherein the ratio of slots to poles is less than 0.75.

Claim 6 (Currently Amended): A permanent magnet brushless motor comprising:

a wound assembly with slots formed therein;

an insulated copper wire wound within the slots to provide electrical phases;

a field assembly comprising a permeable structure and permanent magnet poles arranged thereon;

wherein the wound assembly and the field assembly are arranged to produce a motive force when the electrical phases of the wound assembly are excited; and

wherein the ratio of slots to poles is greater than 0.75 but less than 1.0 to increase torque efficiency.

Claim 7 (Original): A permanent magnet brushless motor according to claim 6 wherein the ratio of slots to poles is less than 0.90.

Claim 8 (Currently Amended): A slow speed/high torque permanent magnet brushless servo motor comprising:

a wound assembly with slots formed therein;

an insulated copper wire wound within the slots to provide electrical phases;

a field assembly comprising a permeable structure and at least 20 permanent magnet poles arranged thereon;

wherein the wound assembly and the field assembly are arranged to produce a motive force when the electrical phases of the wound assembly are excited; and

wherein the ratio of slots to poles is greater than 0.5 but less than 1.0 to increase torque efficiency.

Claim 9 (Original): The motor according to claim 8 wherein the slot pole ratio is chosen to create a balanced winding.

Claim 10 (Original): The motor according to claim 8 wherein the slot pole ratio is chosen for optimum cogging performance.

Claim 11 (Original): The motor according to claim 8 wherein the slot/pole ratio is chosen to enable efficient machine winding of the wound assembly.

Claim 12 (Original): The motor according to claim 8 wherein the slot/pole ratio is chosen to have a low total harmonic distortion.

Claim 13 (Original): The motor according to claim 8 wherein the slot pole ratio is chosen to create a balanced winding, with optimum cogging performance, and efficient machine winding of the wound assembly.

Claim 14 (New): The motor according to claim 1, wherein not all of the slots are wound with insulated copper wire.

Claim 15 (New): The motor according to claim 1, wherein torque efficiency is increased by increasing torque density based on a volume of magnetic materials.